Guidance on incorporating the 2015 International Residential Code (IRC) Section R322 Flood-Resistant Construction into municipal floodplain zoning regulations or ordinances

Connecticut Department of Energy & Environmental Protection
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Background

Effective October 1, 2018, the Office of the State Building Inspector (OSBI) will amend the current state building code to adopt the 2015 International Residential Code (IRC). Please see the OSBI website for more information on this change, which can be found at: https://portal.ct.gov/DAS/Office-of-State-Building-Inspector/Building-and-Fire-Code-Adoption-Process.

The adoption of the 2015 IRC will make significant changes to the elevation requirement for new construction and substantially improved structures in 100-year floodplains, especially coastal floodplains, which may be different than the standards currently contained in your local floodplain zoning regulations or ordinance.

The 2015 IRC, Chapter 3, Section R322, Flood-Resistant Construction can be found at: https://codes.iccsafe.org/public/document/toc/553/. Section R322.2 and R322.3 contains the elevation requirements for special flood hazard areas. Below is a summary of these requirements:

- **AE and A Zones** – Lowest floor elevated to Base Flood Elevation (BFE) plus 1 foot.
- **AO and AH Zones** – Lowest floor elevated to Highest Adjacent Grade (HAG) as the depth number specified on the flood insurance rate map plus 1 foot or not less than 3 feet if no depth number is specified.
- **Coastal AE and VE Zones** – Bottom of the lowest horizontal member supporting the lowest floor elevated to the BFE plus one foot, with structure built on pier, post or pile foundation utilizing breakaway walls. Breakaway walls in Coastal AE zones must also contain hydraulic flood vents.

Identifying the Coastal AE Zone

The Coastal AE Zone is depicted on your community's current effective flood insurance rate map (FIRM) with the landward limit of the zone labeled "Limit of Moderate Wave Action" (LiMWA), see Figure 1 below. The Coastal AE zone is that portion of an AE zone, lying directly behind a VE zone, with wave heights between 3.0 and 1.5 feet, see Figure 2 below.

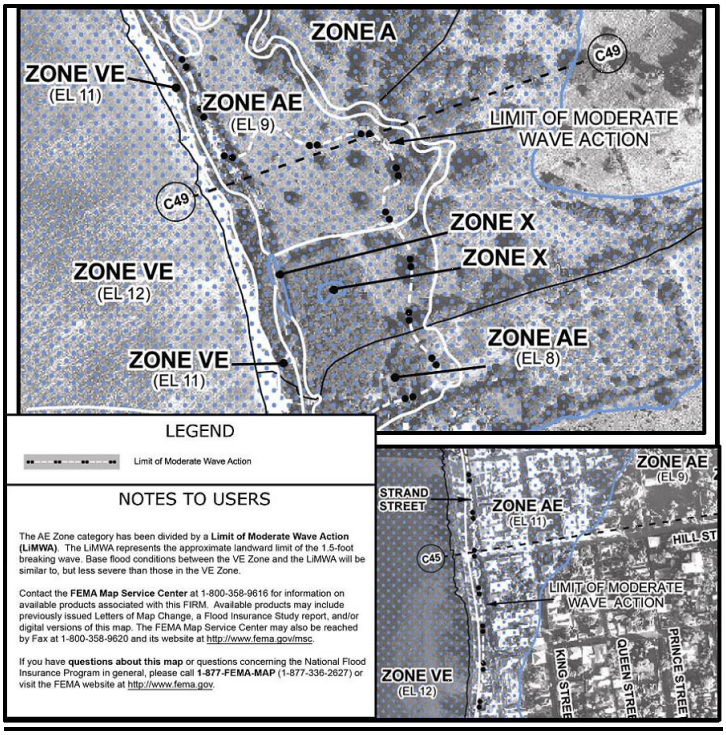


Figure 1 – Coastal AE zone as depicted on a Flood Insurance Rate Map (FIRM) by Limit of Moderate Wave Action boundary line.

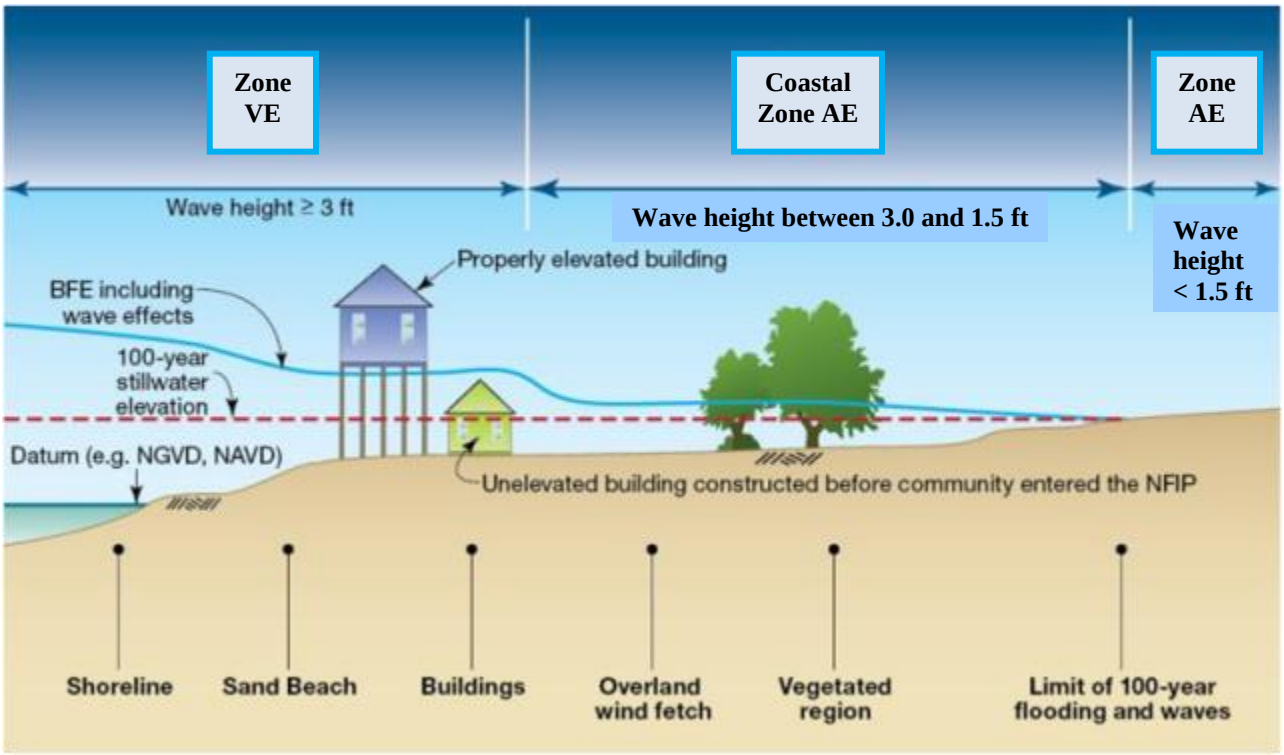
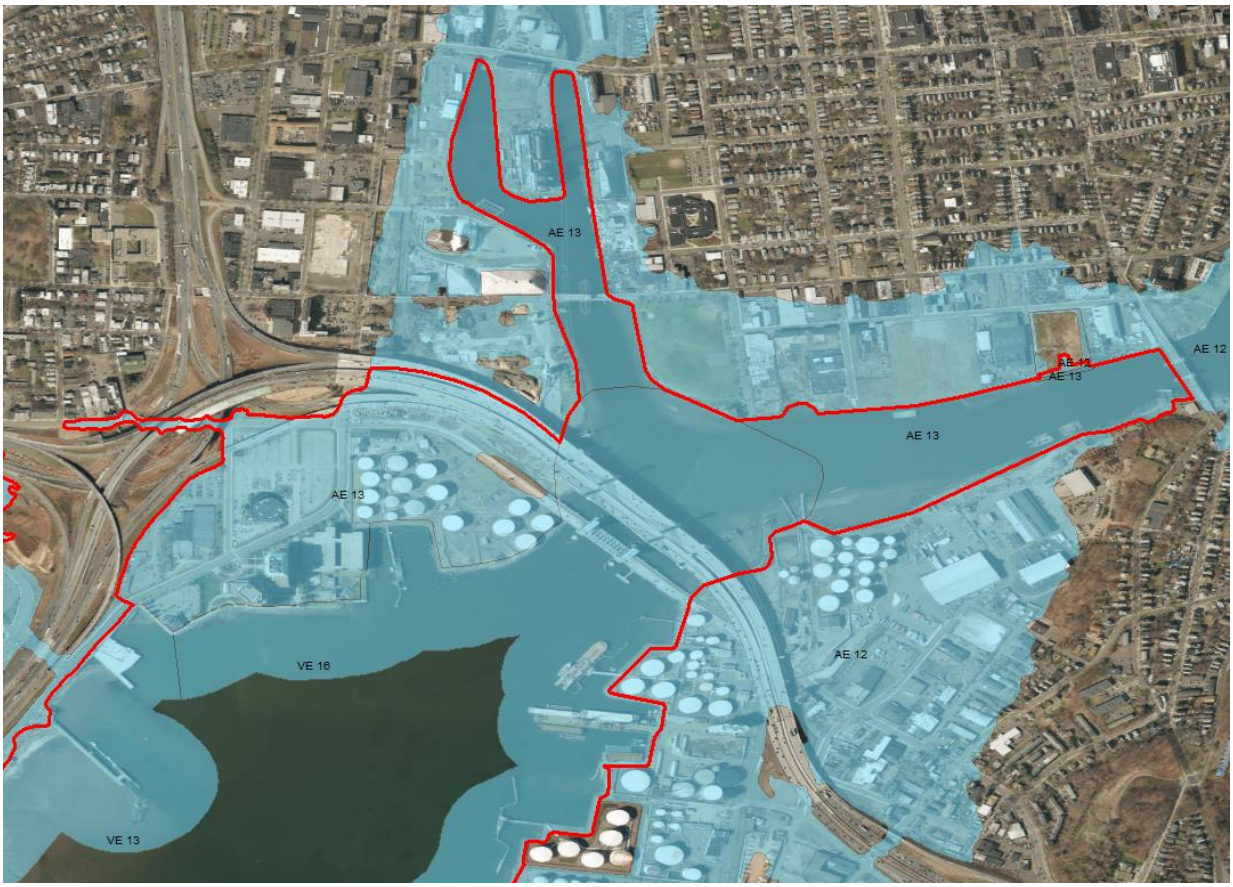


Figure 2 - Depiction of VE Zone, Coastal AE Zone, and AE Zone with wave heights.

Identifying the location of Coastal AE zones can be very problematic for residents, design professionals and community officials as the LiMWA line is often partially hidden if it coincides with other flood zone lines.

It is recommended that community officials download the National Flood Hazard Layer (NFHL) GIS dataset from FEMA's Map Service Center website. The dataset includes a LiMWA dataset with an unbroken LiMWA line, with no portions hidden behind other flood zone lines. Individual municipalities may consider publishing this layer on their own GIS viewers. The NFHL GIS dataset can be downloaded through the Search All Products link, then choosing the appropriate state, county and community. Then click on "Effective Products" and then click on "NFHL Data-County" to download the NFHL database. More information can be found at the NFHL GIS Services Users Guide.

Below is an example of a map of New Haven utilizing this NFHL GIS dataset. The red line is the LiMWA line. Unlike what is depicted on the FIRM, the line stays continuous all along the coast. Any area seaward of the red LiMWA line is either coastal AE or VE zone and must meet new construction requirements outlined in the updated state building code.



Model Regulation

The CTDEEP has developed a coastal and an inland model floodplain regulation/ordinance which includes the new 2015 IRC requirements. The goal is to have this language mirror the standards in the updated state building code so there are no conflicts. ***The most significant change is the requirement to regulate the Coastal AE zone to the same standards as a VE Zone.*** The changes provided should be reviewed against your municipality's specific ordinance or regulations. The CTDEEP is available to review your municipality's ordinance or regulations upon request.

Additional Resources

- Reducing Flood Losses Through the International Codes, 4th Edition, 2014: https://www.fema.gov/media-library/assets/documents/96634
- Highlights of ASCE 24 Flood Resistant Design and Construction: https://www.fema.gov/media-library/assets/documents/14983
- Floodplain Building Elevation Standards, Current Requirements & Enhancement Options: https://circa.uconn.edu/wp-content/uploads/sites/1618/2018/03/Floodplain-Building-Elevation-Standards.pdf
- Height Restrictions on Elevated Residential Buildings in Connecticut Coastal Floodplains: https://circa.uconn.edu/wp-content/uploads/sites/1618/2018/03/Height-Restrictions-on-Elevated-Buildings.pdf